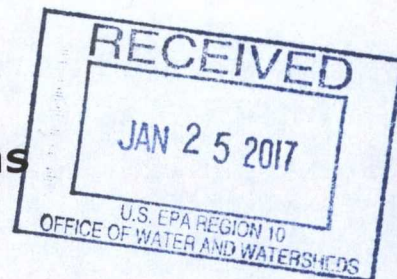


Annual Report of Operations
for Year 2016

To comply with NPDES General Permit No. WAG130000 for Federal
Aquaculture Facilities and Aquaculture Facilities Located in Indian
Country within the Boundaries of the State of Washington

NPDES # for your Facility:

WAG130022

Facility & Owner Information

Facility Name: <u>Quilcene National Fish Hatchery</u>	
Operator Name (Permittee): <u>U.S. Fish and Wildlife Service</u>	
Address: <u>281 Fish Hatchery Road</u> <u>Quilcene, Washington 98376</u>	
Email: <u>dan_magneson@fws.gov</u>	Phone: <u>(360)-765-3334 ext. 3</u>
Owner Name (if different from operator):	
Email:	Phone:

Best Management Practices (BMP) Plan

Has the BMP Plan been reviewed this year? ☒ Yes ☐ NoDoes the BMP Plan fulfill the requirements of the General Permit? ☒ Yes ☐ No

Summarize any changes to the BMP Plan since the last annual report. Attach additional pages if necessary.



EPA General Permit WAG130000 - Annual Report

Operations and Production

Total harvestable weight produced in the past calendar year in pounds (lbs): 28,384
Pounds of food fed to fish during the maximum month: 4048

List the species grown or held at your facility and the annual production of each in gross harvestable weight. If fish were released rather than harvested, list the weight at time of release.

Species	Fish Produced	Receiving Water(s) to which Fish were Released	Month Released/Spawned
Coho Salmon	8,724 lbs.	Coho Pre-smolt Transfers-the Skokomish Tribal Net Pen in Quilcene Bay	March 2016
Coho Salmon	23,071 lbs.	On-Station Coho Smolt Release- Skokomish Quilcene River	April 2016

Fill in the table below with production numbers from the past year. List the **maximum** amount of fish on-site and the maximum amount of food fed **per month**.

Month	Total Fish (lbs)	Fish Feed (lbs)	Month	Total Fish (lbs)	Fish Feed (lbs)
January	24,837	1707 1/2	July	10,379	2200
February	28,462	3020	August	14,920	4048
March	33,682	3227 1/2	September	16,169	2200
April	26,607	3592 1/2	October	18,184	1760
May	5,765	1892	November	19,486	1628
June	8,105	1760	December	21,346	1511

Additional Comments:

No Medicated Feeds Used At All- Just Regular Production Ron Feed.

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Solid Waste Disposal

Describe the solid waste disposed of during the calendar year (including fish mortalities).

Type of Solid Disposed	Date Disposed	Location Disposed
Contents of Raceway - Directed Settling Pond	May 2016	On-Site
Additional Comments:		

Fish Mortalities

Include a description and the dates of mass mortalities in the past year (more than 5% per week). Attach additional pages, if necessary. Include total mortalities from all causes.

Date	Cause of Deaths	Steps Taken to Correct Problem	Pounds of Fish
Additional Comments:			
No Mass Mortality in Calendar Year 2016			

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Noncompliance Summary

Include a description and the dates of noncompliance events (including spills), the reasons for the incidents, and the steps taken to correct the problems. Attach additional pages, if necessary.

No Non Compliance Events in Calendar Year 2016.

Inspections & Repairs for Production & Wastewater Treatment Systems

Date Inspected	Date Repaired	Description of System Inspected and/or Repaired
<i>May 2016</i>	<i>No Repairs Were Needed</i>	<i>Inspected: Intakes, Settling Basins (all), Raceway Banks, Fish Ladder and Receiving Channel, Drain Pit.</i>

Aquaculture Drugs and Chemicals

Please indicate whether you used each drug/chemical **during the past calendar year**.

Describe the use of each drug/chemical in more detail on the following pages.

Used in the past year?	Drug or Chemical
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Azithromycin
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Chloramine-T: <i>See additional reporting requirements on page 7</i>
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Chlorine
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Draxxin
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Erythromycin - injectable
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Erythromycin - medicated feed
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Florfenicol (Aquaflor)
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Formalin - 37% formaldehyde: <i>See additional reporting requirements on page 7</i>
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Herbicide - describe:
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Hormone - describe:
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Hydrogen Peroxide: <i>See additional reporting requirements on page 7</i>
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Iodine: <i>See additional reporting requirements on page 7</i>
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Oxytetracycline
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Potassium Permanganate: <i>See additional reporting requirements on page 7</i>
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Romet
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	SLICE (emamectin benzoate)
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Sodium Chloride - salt
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Vibrio vaccine <i>No discharged at hatchery - slowly exchanged enroute to Quilcenc Bay Net Pen by pumping saltwater.</i>
<input type="checkbox"/> Yes <input type="checkbox"/> No	Other:
<input type="checkbox"/> Yes <input type="checkbox"/> No	Other:

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Aquaculture Drugs and Chemicals (cont'd)

Describe all drug and/or chemical treatments that occurred during the year. Fill out the information below for each drug or chemical, plus page 7 for water-borne treatments. Attach additional pages as necessary.

Brand Name: <i>Western Chemical</i>		Generic Name: <i>Ovadine (PVP Iodine)</i>	
Reason for use: <i>Main Hatchery Building: Egg Hardening plus general disinfection</i>			
<input checked="" type="checkbox"/> Preventative/Prophylactic <input type="checkbox"/> As-needed	Total quantity of formulated product per treatment (specify units): <i>1860 mls</i>	Total quantity of formulated product used in past year (specify units): <i>13 3/4 gallons</i>	
Date(s) of treatment: <i>Each of 6 spawning events, then 6 times to disinfect incubation trays after fish moved to raceways</i> <i>January, February; September - December</i>			Total number of treatments in past year: <i>12</i>
Maximum daily volume of treated water: <i>13 gallons</i>	Treatment concentration (specify units): <i>75 ppm</i>	Duration and frequency of treatment(s): <i>30 minutes</i>	
Method of application:	<input checked="" type="checkbox"/> Static Bath <input type="checkbox"/> Flow-through	<input type="checkbox"/> Medicated Feed <input type="checkbox"/> Other (describe):	
Location in facility chemical was used (check all that apply):	<input type="checkbox"/> Raceways <input checked="" type="checkbox"/> Incubation building	<input type="checkbox"/> Ponds <input type="checkbox"/> Off-line settling basin <input type="checkbox"/> Other (describe):	
Where did water treated with this chemical go? (check all that apply):	<input type="checkbox"/> Discharged w/o treatment <input checked="" type="checkbox"/> Settling basin	<input type="checkbox"/> Septic System <input type="checkbox"/> Publicly owned treatment works <input type="checkbox"/> Other (describe):	
Provide any additional information about how this chemical was used and/or special pollution prevention practices during use: <i>All is routed to Settling Basin</i>			

Brand Name: <i>Western Chemical</i>		Generic Name: <i>1.75% Iodine</i>	
Reason for use: <i>Disinfection of fish culture implements (pond broom, moat nets)</i>			
<input checked="" type="checkbox"/> Preventative/Prophylactic <input type="checkbox"/> As-needed	Total quantity of formulated product per treatment: <i>0.0018 gallons</i>	Total quantity of formulated product used in past year (specify units): <i>12 gallons even</i>	
Date(s) of treatment: <i>January 2 - December 30, 2016 except late Spring weekends all the way until end of December.</i>			Total number of treatments in past year: <i>274 days</i>
Maximum daily volume of treated water: <i>8,379 gallons</i>	Treatment concentration (specify units): <i>0.00000107 gallons</i>	Duration and frequency of treatment(s): <i>A quick dip is all</i>	
Method of application:	<input type="checkbox"/> Static Bath <input checked="" type="checkbox"/> Flow-through	<input type="checkbox"/> Medicated Feed <input type="checkbox"/> Other (describe):	
Location in facility chemical was used (check all that apply):	<input checked="" type="checkbox"/> Raceways <input type="checkbox"/> Incubation building	<input type="checkbox"/> Ponds <input type="checkbox"/> Off-line settling basin <input type="checkbox"/> Other (describe):	
Where did water treated with this chemical go? (check all that apply):	<input checked="" type="checkbox"/> Discharged w/o treatment <input checked="" type="checkbox"/> Settling basin	<input type="checkbox"/> Septic System <input type="checkbox"/> Publicly owned treatment works <input type="checkbox"/> Other (describe):	
Provide any additional information about how this chemical was used and/or special pollution prevention practices during use: <i>When cleaning raceways, discharged to Settling Basin. If merely removing mortality on non-cleaning days, to receiving channel, down fish ladder to river</i>			

Use 0.0438 gallons each day. 24 raceways and dip each of pond broom, moat picker.
Is 0.0009 gallons per dip into raceway, dipped into 600 gpm raceway and diluted in turn by 5,400 g.p.m flows.

30 minutes and 75 ppm and 6" on trough as per Egg Handling Binder. 6" x 18 1/2 x 16 1/2

"A" bank raceway 1120 cubic feet

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Aquaculture Drugs and Chemicals (cont'd)

Describe all drug and/or chemical treatments that occurred during the year. Fill out the information below for each drug or chemical, plus page 7 for water-borne treatments. Attach additional pages as necessary.

Brand Name: <u>Western Chemical</u>		Generic Name: <u>Parasite-S</u>	
Reason for use: <u>Maintenance of Adult Coho Broodstock in Continued Good Health</u>			
<input checked="" type="checkbox"/> Preventative/Prophylactic <input type="checkbox"/> As-needed	Total quantity of formulated product per treatment (specify units): <u>4.0 gallons</u>	Total quantity of formulated product used in past year (specify units): <u>321 3/4 gallons</u>	
Date(s) of treatment: <u>August 17, 2016 - December 2, 2016</u>		Total number of treatments in past year: <u>49</u>	
Maximum daily volume of treated water:		Treatment concentration (specify units):	
Method of application: <input type="checkbox"/> Static Bath <input checked="" type="checkbox"/> Flow-through		Duration and frequency of treatment(s): <u>Treated then every Monday, Wednesday + Friday between these days including Holidays</u> <u>Monday, Wednesday, Fridays - 4 gallons of each these days dispensed over 20 minutes in 300 g.p.m. recirculation flows</u>	
Location in facility chemical was used (check all that apply): <input checked="" type="checkbox"/> Raceways <input type="checkbox"/> Incubation building		<input type="checkbox"/> Ponds <input type="checkbox"/> Off-line settling basin <input type="checkbox"/> Other (describe):	
Where did water treated with this chemical go? (check all that apply): <input type="checkbox"/> Discharged w/o treatment <input checked="" type="checkbox"/> Settling basin		<input type="checkbox"/> Septic System <input type="checkbox"/> Publicly owned treatment works <input type="checkbox"/> Other (describe):	
Provide any additional information about how this chemical was used and/or special pollution prevention practices during use: <u>All is routed to Settling Basin at all times. Metered out by pump.</u>			

Egg anti-fungal treatment

Brand Name: <u>Hach</u>		Generic Name: <u>25569-00 Free Chlorine Reagent Set</u>	
Reason for use: <u>Measure / Monitor Free Chlorine Levels</u>			
<input checked="" type="checkbox"/> Preventative/Prophylactic <input type="checkbox"/> As-needed	Total quantity of formulated product per treatment: <u>each set = 946 mls.</u>	Total quantity of formulated product used in past year (specify units): <u>10 sets of reagents = 9,460 mls.</u>	
Date(s) of treatment: <u>January 1, 2016 - December 31, 2016</u>		Total number of treatments in past year: <u>Continuous</u>	
Maximum daily volume of treated water: <u>in 24 hours, 1,938,240 gallons</u>		Treatment concentration (specify units): <u>0.000000002</u>	
Method of application: <input type="checkbox"/> Static Bath <input checked="" type="checkbox"/> Flow-through		Duration and frequency of treatment(s): <u>Continuous 24 hours per day 7 days a week</u>	
Location in facility chemical was used (check all that apply): <input type="checkbox"/> Raceways <input type="checkbox"/> Incubation building		<input type="checkbox"/> Ponds <input type="checkbox"/> Off-line settling basin <input checked="" type="checkbox"/> Other (describe): <u>Isolation Building when it is in operation - currently, just Domestic Water</u>	
Where did water treated with this chemical go? (check all that apply): <input checked="" type="checkbox"/> Discharged w/o treatment <input type="checkbox"/> Settling basin		<input type="checkbox"/> Septic System <input type="checkbox"/> Publicly owned treatment works <input type="checkbox"/> Other (describe):	
Provide any additional information about how this chemical was used and/or special pollution prevention practices during use: <u>use a single reagent set every 60 days, or 15.77 mls per day, or .0042 gallons per day.</u>			

3 c.f.s. Pre-Settling Basin overflow - 5,400 g.p.m. over 9 raceways

Aquaculture Drugs and Chemicals (cont'd)**Additional Reporting Requirements for Water-Borne Treatments**

- If a water-borne treatment was used during the calendar year, Permittees must include detailed records/calculations as an attachment to this Annual Report in order to demonstrate how the maximum effluent concentrations of solution and active ingredient were calculated for each chemical.
- EPA recognizes that water-borne treatments may vary in the volume of the vessels treated, concentration, quantity of product, etc. Permittees must provide the information listed in the following tables for a reasonable worst case (i.e., maximum effluent concentration) scenario, not for each individual treatment.
- Permittees must submit this information and calculate the maximum effluent concentration for each water-borne chemical used during the past calendar year.
- See also Appendix D for the Chemical Log Sheet.

Static Bath Treatments <i>See Attached Sheet</i>		
Tank Volume	<i>16 1/2" x 18 1/2" x 5" egg trough</i>	Liters
Desired Static Bath Treatment Concentration	<i>75 ppm active solution</i>	µg/L
Volume of Product Needed	<i>1860 mLs</i>	Liters Product
Maximum Effluent Concentration of: 1) Solution and 2) Active Ingredient	Solution: Active Ingredient:	Specify Units
Minimum Volume of Total (treated + untreated) Water Discharged from the Facility per day	<i>5,400 gallons per minute X 60 minutes X 24 hours = 7,776,000 gallons</i>	Specify Units
Maximum % of Facility Discharge Treated	<i>all PVP Iodine to Settling Pond</i>	<i>100%</i> % of Total Discharge

Flow-Through Treatments <i>See Attached Sheet</i>		
Tank Volume		Liters
Calculated Flow Rate		Liters/Minute
Duration of Treatment		Minutes
Desired Flow-Through Treatment Concentration of Product		µg/L
Amount of Product to Add Initially		Liters Product
Amount of Product to Add During Treatment		mL/Minute
Total Volume of Product Needed		Liters Product
Maximum Effluent Concentration of: 1) Solution and 2) Active Ingredient	Solution: Active Ingredient:	Specify Units
Minimum Volume of Total (treated + untreated) Water Discharged from the Facility per day	<i>5,400 gallons per minute X 60 minutes X 24 hours = 7,776,000 gallons</i>	Specify Units
Maximum % of Facility Discharge Treated	<i>2.83%</i>	% of Total Discharge

complete cleaning of all 24 raceways = 720,211 gallons to settling pond

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CHEMICAL USE IN FISH CULTURE

Western Chemical's Ovadine (PVP Iodine): 1860 mls are used, equating to 0.49 gallons. This is routed to the settling basin and further diluted by the 355,348 gallons of water in the settling basin itself.

This is thus a 0.000001378 total product concentration, and for total active ingredient is 0.000000137

Western Chemical's 1.75% Iodine: the highest concentration would be dipping mortality without pond cleaning. Since mortality is generally at the tail screens and at our 600 g.p.m. flows per raceway it is quickly overflowed out of the raceway, it is being diluted by 9 raceways X 600 g.p.m. each = 5,400 g.p.m. aggregate flows. So 0.0009 gallons per dip of 1.75% Iodine total product concentration is thus 0.000000166, and at its 1.75% active ingredient level is 0.000000002

Western Chemical's Parasite – S: this product is administered at a rate of 4 gallons over 20 minutes into 10,713 gallons of water within the raceway, which is in turn at 300 g.p.m. flows during treatment. So the treatment is .2 gallons per minutes into 300 g.p.m. raceway inflows.

All is discharged down to the settling basin. So the entire 4 gallons of Parasite –S is received by 355,348 gallons of water down there, resulting in a maximum total concentration of 0.0113, or 0.0000042 for the active ingredient.

Hach Free Chlorine Reagent Set: we use 946 mLs. over 60 days; using the label, I could not determine how much of this product is active ingredient, so for worst case scenario I considered all of it active ingredient. The Hach CL-17 using these reagents runs 24 hours per day, and is mixed into approximately 3 c.f.s. of water, or 1,346 g.p.m. overflowing from the pre-settling basin also all 24 hours of the day.

Reagent use is thus 15.77 mLs per day, or 0.0042 gallons per day. This is discharged into 1,938,240 gallons of water over 24 hours, and yields a total concentration of 0.000000002.

The active ingredients for:

1.75% Iodine = 1.75% from Nonylphenoxypoly (ethyleneoxy) ethanol-iodine complex

PVP Iodine = 10% Povidone-Iodine Complex providing 1.0% minimum titratable iodine

Parasite – S = 37% formaldehyde

Effluent from the Main Hatchery Building (containing PVP Iodine used in water-hardening freshly spawned eggs) and Parasite – S are routed to the EPA Pond as is Parasite – S from the adult holding ponds. The hatchery 100% switched away from the former use of Perox – Aid for treating adults during the 2016 season; the last use of Perox – Aid was during the 2015 adult holding period.

Both the PVP and 1.75% Iodine solutions do not necessarily end up in the hatchery effluent, but are also used to disinfect raingear, waders and other equipment brought in by our partners before actual use at this station.

EPA General Permit WAG130000 - Annual Report


Changes to the Facility or Operations

Describe any changes to the facility or operations since the last annual report.

None.

Signature and Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly evaluate and gather the information submitted. Based on my inquiry of the person or persons, who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

	<i>Daniel M. Magnuson</i>
Printed name of person signing	Title <i>Assistant Hatchery Manager</i>
Applicant Signature	Date Signed

Submittal Information

Send the complete, signed information, along with any attachments, to the following address:

U.S. EPA Region 10, OWW-191
Washington Hatchery Annual Report
1200 Sixth Avenue, Suite 900
Seattle, WA 98101-3140